

## Southern Thunder 2009 (ST09) Agenda

### TUESDAY, 28 JULY 2009 (Saturn Room)

- 7:30-8:00 Workshop Check-in  
8:00-8:10 Welcome and Opening Remarks (Winnie Crawford, Steve Goodman)

#### **SESSION 1: TOTAL LIGHTNING NETWORK STATUS REPORTS**

Session Chair: Dennis Buechler (UAH)

##### **LMA**

- 8:10-8:30 Rison, Krehbiel, Thomas, Aulich, Edens  
*Lightning Mapping Arrays: Technical status and developments*
- 8:30-8:40 Bruning, Goodman, Blakeslee, Zubrick, Krehbiel  
*Status and Use of the DC Lightning Mapping Array*
- 8:40-8:50 MacGorman  
*The Oklahoma Lightning Mapping Array: Present Status and Short-term Plans*
- 8:50-9:00 Startz  
*The 3-Dimensional Lightning Array at White Sands Missile Range*
- 9:00-9:10 Blakeslee, Christian, Bailey, Buechler, Hall, McCaul, Stano  
*Description and Status of the North Alabama Lightning Mapping Array*
- 9:10-9:20 Trostel  
*A Lightning Mapping Array for Northern Georgia: Future Plans and Current Status*
- 9:20-9:40 Break

##### **LDAR II**

- 9:40-9:50 Holle, Hembury, Demetriades  
*Overview of the current status and future plans for the Vaisala Tucson and Dallas-Fort Worth VHF total lightning mapping networks*
- 9:50-10:00 McKinney  
*An update on the Houston area LDAR network*
- 10:00-10:10 Roeder  
*Lightning Detection Systems Used For America's Space Program In Florida*

##### **OTHER**

- 10:10-10:20 Holden  
*The LANL Dual-Band VLF/VHF Lightning Mapping Array*
- 10:20-10:30 Heckman  
*WeatherBug Total Lightning Network*
- 10:30-10:40 Goodman  
*The Geostationary Lightning Mapper (GLM) for GOES-R: Overview and Status*
- 10:40-10:50 Break
- 10:50-11:30 Discussion on Network Status
- 11:30-1:00 Lunch (on your own)

## **SESSION 2: OPERATIONAL ASPECTS OF TOTAL LIGHTNING MEASUREMENTS**

Session Chair: Phillip Bothwell (NWS/SPC)

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| 1:00-1:15 | Nadler, Darden, Burks, Stano, Buechler<br><i>An Operational Perspective of Total Lightning at WFO Huntsville</i>  |
| 1:15-1:30 | Zubrick<br><i>Operational Use of the DC Lightning Mapping Array at the NWS Weather Forecast Office, Sterling, VA</i>  |
| 1:30-1:45 | Oram<br><i>Total Lightning Detection Systems in Use at the NWS Spaceflight Meteorology Group for Space Flight Operations and Local Watches/Warnings</i>   |
| 1:45-2:00 | Volkmer, Reinhart, Spratt, Sharp<br><i>The Use of Total Lightning Information during Experimental Incident Support Operations (NWS Melbourne, Fla)</i>  |
| 2:00-2:15 | McNamara<br><i>Four Dimensional Lightning Surveillance System's Application in Space Launch Weather Support</i>   |
| 2:15-2:30 | Break   |
| 2:30-2:45 | Patrick<br><i>Assessing Lightning Threat Using Vaisala VHF Total Lightning Mapping Network Data (DFW)</i>   |
| 2:45-3:00 | Deierling, Kessinger, Nelson<br><i>Predicting lightning potential on different time scales—a conceptual model and first results (for White Sands)</i>   |
| 3:00-3:15 | Holden<br><i>Observations of lightning activity during the rapid intensification of Hurricanes Rita and Katrina from LANL's lightning sensing network</i>   |
| 3:15-3:30 | Kuhlman, Smith, Bruning, Stano, Manross, Stumpf<br><i>Results from the 2009 Experimental Warning Program: Forecaster Use and Evaluation of Total Lightning Data</i>                                   |
| 3:30-3:45 | Siewert, Schneider, Bruning, Schaefer<br><i>Activities within the NESDIS supported SPC GOES-R Proving Ground in preparation for use of Geostationary Lightning Mapper data in forecast operations</i> |
| 3:45-4:00 | Break   |
| 4:00-5:00 | Discussion on Operational Demonstrations of Total Lightning Networks  |
| 5:00      | Workshop ends for the day, dinner/evening on your own   |

**WEDNESDAY, 29 JULY 2009 (Saturn Room)**

7:30-8:00 Workshop Check-in

8:00-8:10 Announcements

**SESSION 3: TOTAL LIGHTNING RESEARCH, APPLICATIONS, AND ISSUES**

Session Chair: John Trostel (GTRI)

**Topic 1: Display and Visualization of Total Lightning Data in Operations**

8:10-8:25 Rudlosky, Fuelberg  
*Investigating Total Lightning Using the Warning Decision Support System – Integrated Information Software*

8:25-8:40 Lakshmanan, Kuhlman, Smith  
*Identifying and Tracking Cells on Total Lightning Derived Grids*

8:40-8:55 Kuhlman, Lakshmanan, Smith, MacGorman  
*Evaluation of Cell Tracking and Trends Derived from Total Lightning Products*

8:55-9:10 Stano, Darden, Burks, Ba, Hall  
*Visualization of Operational Total Lightning Data*

**Topic 2: Lightning Forecasting**

9:10-9:25 Anderson, Fuelberg  
*Developing a Forecasting Scheme for Lightning Cessation at the Kennedy Space Center*

9:25-9:40 Bothwell  
*Prediction of CG Lightning, Intense CG lightning and Possibilities for Total Lightning Prediction*

9:40-9:55 Oram  
*Total Lightning Data and The Lightning Watch and Warning Program for NASA's Johnson Space Center*

9:55-10:15 Break

10:15-10:30 Buechler, Boldi, Blakeslee, Stano  
*The North Alabama Lightning Warning Product*

10:30-10:45 McCaul, Goodman, LaCasse, Cecil  
*Forecasting lightning threat using cloud-resolving model simulations*

**Topic 3: Using Total Lightning to Nowcast Storm Severity**

10:45-11:00 Andra  
*A Multi-sensor Perspective of the Tornadoic Storms of February 10, 2009*

11:00-11:15 McKinney, Carey, Patrick, Orville  
*Total Lightning Observations of Supercells over North Central Texas*

11:15-11:30 Schultz, Petersen, Carey  
*Preliminary Development and Evaluation of Lightning Jump Algorithms for the Real-Time Detection of Severe Weather*

11:30-11:45 Krehbiel, Rison, Thomas, Edens  
*Storm electrical structures and characteristics as indicated by VHF total lightning measurements*

11:45-12:00 MacGorman, Kuhlman, Krehbiel, Biggerstaff  
*Small, Continual Lightning Activity in the Overshooting Turret of Supercell Storms*

12:00-12:15 DeMaria  
*Improving Tropical Cyclone Intensity Forecasts Using Lightning Observations*

- 12:15-1:30 Lunch (on your own)
- 1:30-4:30 Breakout Discussions (Saturn, Mars, Mercury Rooms)  
 Leader: Don MacGorman (NOAA/NSSL)
- 1:30-1:45 Determine Breakout Topics
- 1:45-4:00 Breakout Groups Meet
- 4:00-4:30 Breakout Groups Reconvene in Plenary
- 4:30 Workshop ends for the day
- 5:30-7:30 Dinner Event, Jupiter Room (Attendees and One Pre-Registered Adult Guest Only)

**THURSDAY, 30 JULY 2009 (Saturn Room)**

- 7:30-8:00 Workshop Check-in
- 8:00-8:10 Announcements

**SESSION 3: TOTAL LIGHTNING RESEARCH, APPLICATIONS, AND ISSUES (continued)**

Session Chair: Scott Rudlosky (FSU)

**Topic 4: Total Lightning/Radar Studies**

**Non-Dual-Polarization Radar Studies**

- 8:10-8:25 Dai, Wang, Chen, Tao, Lin  
*Thunderstorm Evolution Analysis and Estimation Using Radar and Total Lightning Data*
- 8:25-8:40 Murphy, Holle, Demetriades, Pytlak  
*Total lightning, radar and satellite observations of two monsoon thunderstorm events in the Tucson area in summer 2007*

**Dual-Polarization Radar Studies**

- 8:40-8:55 Schultz, Gatlin  
*Dual polarization radar and total lightning analysis of a non-tornadic low topped supercell from April 13, 2009*
- 8:55-9:10 Johnson, Petersen  
*Behavior of Lightning and Updrafts for Severe and Non-severe Storms in Northern Alabama*
- 9:10-9:25 Carey, Petersen, Deierling  
*Radar Differential Phase Signatures of Ice Orientation for the Prediction of Lightning Initiation and Cessation*
- 9:25-9:40 Petersen, Carey, Deierling, Johnson, Bateman, Roeder, McNamara  
*Developing Lightning Prediction Tools for the CCAFS Dual-Polarimetric Radar*
- 9:40-9:55 Weiss, MacGorman, Kuhlman  
*Lightning in the Anvils of Supercells*
- 9:55-10:15 Break

## Topic 5: GLM studies

- 10:15-10:45     Invited Keynote Speaker: Hugh Christian (UAH)  
*The Geostationary Lightning Mapper (GLM): Design and Performance*
- 10:45-11:00     Finke, Grandell, Stuhlmann  
*The Lightning Imager on the Meteosat Third Generation*
- 11:00-11:15     Gurka, Goodman, Mostek, Schmit, Miller, Bachmeier, DeMaria, Fuell  
*GOES-R Proving Ground: Ensuring User Readiness*
- 11:15-11:30     Stano, Blakeslee, McCaul, Bateman, Darden  
*NASA SPoRT GOES-R Proving Ground Activities Utilizing Lightning Mapping Array Observations*
- 11:30-1:00     Lunch (on your own)
- 1:00-4:00     Breakout Discussions (Saturn, Mars, Mercury Rooms)  
Leader: Steve Goodman (NOAA/NESDIS)
- 1:00-1:15             Determine Discussion Topics and Breakout Groups
- 1:15-3:30             Breakout Groups Meet
- 3:30-4:00             Breakout Groups Reconvene in Plenary
- 4:00             ST09 Workshop ends. See you in Oklahoma in 2011(?).